

Crustacea Decapoda : Notes on trapeziid crabs from New Caledonia including descriptions of two new species

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ABSTRACT

Four genera and seven species of trapeziid crabs are identified from recent collections taken in New Caledonia. Descriptions and illustrations are given for new species; *Calocarcinus crosnieri* and *Tetralia sanguineomaculata*. New

records are reported for *Calocarcinus africanus*, *Quadrella maculosa* and *Trapezia guttata*. *Trapezia cymodoce* and *T. septata*, identified by A. MILNE EDWARDS from New Caledonia under the wrong names, are commented upon.

RÉSUMÉ

Crustacea Decapoda : Note sur des crabes de la famille des Trapeziidae récoltés en Nouvelle-Calédonie. Description de deux espèces nouvelles.

Sept espèces appartenant à quatre genres de la famille des Trapeziidae ont été identifiées dans des récoltes faites récemment en Nouvelle-Calédonie. Deux espèces nouvelles, *Calo-*

carcinus crosnieri et *Tetralia sanguineomaculata*, sont décrites et figurées. Trois espèces, *Calocarcinus africanus*, *Quadrella maculosa* et *Trapezia guttata* sont signalées dans cette région pour la première fois. Enfin il est traité de *Trapezia cymodoce* et *T. septata*, déjà mentionnées en Nouvelle-Calédonie par A. MILNE EDWARDS mais sous des noms erronés.

INTRODUCTION

Dr A. CROSNIER provided the impetus for this work by sending us a large collection of trapeziid crabs he assembled with Dr B. RICHER DE FORGES from live corals during the 1984-1986 MUSORSTOM and CHALCAL expeditions to New Caledonia. Further material was made available by the ORSTOM centre at Nouméa from their faunal study of the New Caledonia lagoon.

The trapeziid crabs of New Caledonia were first described by A. MILNE EDWARDS (1873). Since then only members of the genus *Tetralia* have been reported from New Caledonia (SERÈNE, 1973b and TAKEDA & NUNOMURA, 1976).

MUSORSTOM material, having been collected from a wider variety of corals than those obtained by A. MILNE EDWARDS, includes two new species, *Calocarcinus crosnieri* and *Tetralia sanguineomaculata* and several new records; *Calocarcinus africanus* a rare deep-water trapeziid, *Quadrrella maculosa* an octocorallian associate and *Trapezia guttata* associated with pocilloporid corals. The latter species, though seemingly ubiquitous throughout the Indo-Pacific, has not been mentioned from New Caledonia. The study

of this extensive collection raises doubts concerning the identifications of *Trapezia cymodoce* and *T. areolata inermis* by A. MILNE EDWARDS. Access to the material of A. MILNE EDWARDS, housed in the Muséum national d'Histoire naturelle, Paris, was graciously permitted to GALIL by Dr J. FOREST on her visit in 1980 and by Dr A. CROSNIER to CLARK in 1986. Much of the groundwork for the generic and specific assignments presented here was laid in earlier papers dealing with the taxonomy of the Trapeziidae (TAKEDA & GALIL, 1980; GALIL & LEWINSOHN, 1983, 1984, 1985a & b; GALIL 1986a & b).

The MUSORSTOM material is deposited in the Muséum national d'Histoire naturelle, Paris, (MNHN); British Museum (Natural History), (BMNH); and the Zoological Museum of Tel Aviv University, (TAU). Abbreviations used cw. = carapace width, cl. = carapace length and stn = station. Drawings were made with the aid of a camera lucida and an Olympus BH-2 microscope with Nomarski interference contrast was used for the high magnification figures of the first male pleopods.

SYSTEMATIC ACCOUNT

Calocarcinus africanus Calman, 1909

Fig. 1 a-e

Calocarcinus africanus Calman, 1909a : 31. — DE MAN, 1928 : 23, figs 4, 4 a. — SERÈNE, 1968 : 89; 1984 : 291, figs 198, 200, pl. 42F.

MATERIAL EXAMINED. — New Caledonia. MUSORSTOM 4 : stn CP 180, 18°56.80' S, 163°17.70' E, 440 m, 18.09.1985 : 1 ♂, 1 ♀ (MNHN-B 18185). — Stn CP 236, 22°11.30' S, 167°15.00' E, 498-550 m, 2.10.1985 : 3 ♂ (MNHN-B 18183). — Stn CP 238, 23°13.00' S, 167°14.00' E, 500-510 m, 2.10.1985 : 1 ♀ (MNHN-B 18182).

CHALCAL 2 : stn CP 25, 23°38.6' S, 167°

43.12' E, 418 m, 30.10.1986 : 1 ♂ (MNHN-B 18934), 1 ♂ (MNHN-B 18938), 1 ♀ (MNHN-B 18936). — Stn CC 4, 23°38.38' S, 167°43.57' E, 424 m, 30.10.1986 : 1 ♀ (MNHN-B 18935). — Stn DW 77, 23°38.35' S, 167°42.68' E, 435 m, 30.10.1986 : 3 ♂, 5 ♀ (MNHN-B 18933).

Iles Chesterfield. MUSORSTOM 5 : stn DW 272, 24°40.91' S, 159°43.00' E, 500-540 m, 9.10.1986 : 1 ♂ (MNHN-B 18937).

Between Aden and Zanzibar, 1 098 m : 1 ♂, 2 ♀ syntypes (BMNH 1908.10.23.1-3).

Indonesia. C/S Recorder : 10°30' S, 126°35' E, South of Timor, Sahul Bank, 183 m : 4 ♀ (BMNH 1919.9.1.1-4).

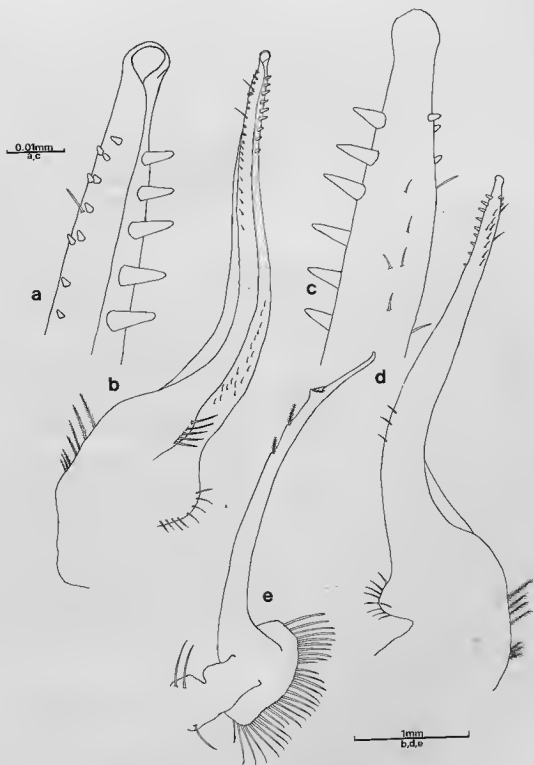


FIG. 1. — *Calocarcinus africanus* Calman, ♂ type, BMNH 1908.10.23.1-3; a-b. ventral aspect of first right pleopod; c-d. dorsal aspect of first right pleopod; e. lateral aspect of second left pleopod.

REMARKS. — *Calocarcinus africanus* was previously known from the BMNH collections and seven specimens collected by Dr MORTENSEN'S Pacific Expedition off Kei Islands, Indonesia, now in the Universitetets Zoologiske Museum, Copenhagen. The present material enriches our holdings of the rare crab and significantly extends the known range. The first and second male pleopods are illustrated (fig. 1 a-e) to facilitate comparison with the new species described below.

Calocarcinus crosnieri sp. nov.

Figs 2 a-h, 3 a-f, 6 a

MATERIAL EXAMINED AND TYPES. — New Caledonia. MUSORSTOM 4 : stn DW 164, 18° 33.20' S, 163°13.00' E, 255 m, 16.09.1985 : 1 ♂ holotype cw. 10.5 mm, cl. 8.2 mm (MNHN-B 21354); 1 ♂, 1 ♀ paratypes (BMNH 1988:23); 1 ♂ paratype (MNHN-B 18186); 3 ♀ paratypes (MNHN-B 18187); 1 ♂, 1 ♀ paratypes (TAU 26819).

DESCRIPTION OF HOLOTYPE. — Carapace (fig. 2 a) width greater than length, octagonal, shiny, dorsal surface moderately convex and microscopically granular behind front. Frontal margin (fig. 2 b) lightly protruding beyond orbits, bevelled, sinuous, median lobes feebly traced. Front separated by shallow emargination from superior orbital angle. Eyes with stout, smooth calcareous stalk and hemispherical cornea. Anterolateral border of carapace oblique from external orbital angle to base of anterior tooth. Anterior tooth curved obliquely forward and slightly more prominent than second tooth. Posterolateral margins straight, longer than anterolateral margins.

Inferior orbital angle blunt. Basal articles of antennae extending between superior and inferior orbital angles. Anterior margin of buccal frame with median notch and lateral indentations at arched terminations of efferent canals. Third maxilliped (fig. 2 c) close fitting. Exopod of third maxilliped columnar, tapering distally, shorter than endopod; with rounded tooth distally at its inner margin. Ischium of endopod subrectangular, lateral margins almost parallel. Shallow longitudinal sulcus near internal margin. Inner distal angle of merus excavate, outer distal angle produced and rounded. Internal margins of both

ischium and merus fringed with setae. Endopod of first maxilliped (fig. 2 d) spatulate, anterior margin medially excavate.

Chelipeds (fig. 2 e-h) long, smooth, markedly unequal. Frontal margin of ischium with conical tooth. Merus elongate, wholly projecting beyond carapace, and with an oblique anterior distal angle. Carpus with a shallow furrow on upper surface, inner angle forming a blunt tooth. Manus of large chela (fig. 2 f & h) bulky and somewhat laterally compressed. Dorsal margin of manus rounded, lower margin bluntly carinate. Manus of smaller chela (fig. 2 e & g) subcylindrical, lower margin forming a ridge delimited by two furrows. Merus, carpus and propodus of pereopods (fig. 3 a) laterally compressed. Curved tapered dactylus and distal portion of propodus sparsely furnished with setae. Posterior surface of dactylus with longitudinal rows of horny spines; anterior surface with plumose setae and horny spines.

First male pleopod (fig. 3 b-c) short, stocky, sinuous, distally spinulose. Second male pleopod (fig. 3 f) long, slender and distally arrow straight.

ETYMOLOGY. — We are pleased to name this species in honour of Dr Alain CROSNIER.

REMARKS. — *Calocarcinus crosnieri* sp. nov. is closely related to its coral-associated congeners *C. africanus* Calman, *C. habei* Takeda and *C. lewinsohni* Takeda & Galil, but can be distinguished by the proportionally longer merus of the cheliped which projects far beyond lateral border of carapace, and the morphology of the first and second male pleopods. The first male pleopod of *C. crosnieri* is short and stocky being similar to that of *C. habei*, however, the second male pleopod of the latter is distally curved, while in the former it is arrow-straight.

Quadrella maculosa Alcock, 1898

Quadrella coronata maculosa Alcock, 1898 : 226 ; 1899, pl. 38, fig. 2.

Quadrella maculosa. - RATHBUN, 1911 : 235 (part). — GUINOT, 1967 : 285. — SERÈNE, 1968 : 89 ; 1973a : 204, figs 4 & 9, 20-22, pl. 3 ; 1975 : 513 ; 1984 : 288, fig. 194, pl. 41E. — GARTH 1971 : 188. — GALIL & TAKEDA, 1985 : 203. —

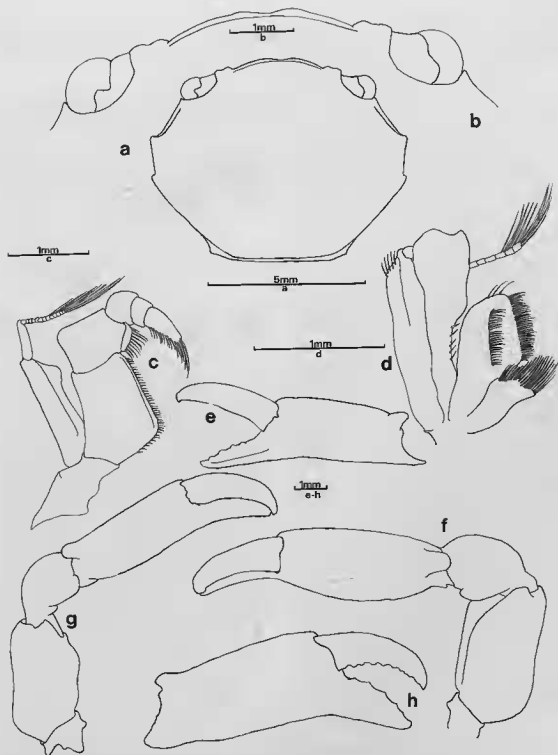


FIG. 2. — *Calocarcinus crosnieri* sp. nov., ♂ paratype, BMNH 1988 : 23; dorsal aspect of, a. carapace, b. frontal margin; ventral aspect of, c. third maxilliped, d. first maxilliped; e, anterior aspect of small cheliped; dorsal aspect of, f. small cheliped, g. large cheliped; h. anterior aspect of large cheliped.

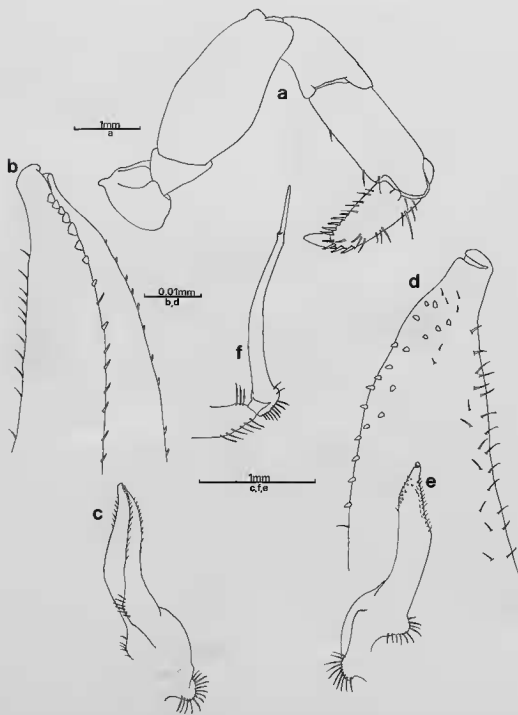


FIG. 3. — *Calocarcinus crosnieri* sp. nov., ♂ paratype, BMNH 1988 : 23; a. posterior aspect of fifth pereiopod; b-c. ventral aspect of first left pleopod; d-e. dorsal aspect of first left pleopod; f. lateral aspect of second left pleopod.

SERÈNE *et al.*, 1974 : 24. — GALIL, 1986a : 285, fig. 5 c-f.

Quadrella cyrenae Ward, 1942 : 45, pl. 3, figs 5, 6. — MICHEL, 1964 : 30. — GUINOT, 1967 : 275.

MATERIAL EXAMINED. — New Caledonia. MURSTOM 4 : stn DW 187, 19°08.30' S, 163°29.30' E, 65-120 m, 19.09.1985 : 1 ♀ (MNHN-B 18184).

REMARKS. — *Quadrella maculosa* has been previously reported from several localities between the Red Sea and New Guinea (GALIL, 1986a). The present specimen further extends the known range.

Tetralia sanguineomaculata sp. nov.

Figs 4 a-h, 5 a-f, 6 b

Tetralia glaberrima - A. MILNE EDWARDS, 1873 : 262. Non *Cancer glaberrimus* Herbst, 1790 : 262, pl. 20, fig. 115.

MATERIAL EXAMINED. — New Caledonia. Lagoon survey : stn 6, 22°25.50' S, 166°21.20' E, 12 m, 21.05.1984 : 2 ♂, 2 ♀. — Stn 77, 22°25.90' S, 166°31.80' E, 22 m, 21.08.1984 : 1 ♂, 2 ♀. — Stn 82, 22°33.10' S, 166°28.50' E, 10 m, 28.08.1984 : 1 ♂, 1 ♀. — Stn 159, 22°37.60' S, 166°35.90' E, 17 m, 24.08.1984 : 1 ♂. — Stn 341, 22°48.70' S, 166°45.60' E, 16-19 m, 28.11.1984 : 1 ♂, 1 ♀. — Stn 412, 22°39.50' S, 167°18.60' E, 40 m, 24.01.1985 : 1 ♂. — Stn 436, 18°06.40' S, 162°50.30' E, 45 m, 27.02.1985 : 1 ♂, 1 ♀. — Stn 459, 18°25.70' S, 163°01.00' E, 40 m, 1.03.1985 : 1 ♂. — Stn 460, 18°23.90' S, 163°00.30' E, 37-41 m, 1.03.1985 : 1 ♂. — Stn 461, 18°22.10' S, 162°59.50' E, 35 m, 1.03.1985 : 2 ♀. — Stn 463, 18°19.80' S, 163°01.30' E, 43 m, 1.03.1985 : 3 ♂, 3 ♀. — Stn 480, 18°56.00' S, 163°29.20' E, 31 m, 2.03.1985 : 3 ♂, 1 ♀. — Stn 483, 19°01.00' S, 163°32.20' E, 33 m, 2.03.1985 : 1 ♂. — Stn 489, 18°51.30' S, 163°28.80' E, 43 m, 3.03.1985 : 1 ♂. — Stn 521, 19°05.30' S, 163°38.00' E, 39 m, 5.03.1985 : 1 ♂, 1 ♀. — Stn 551, 23°00.00' S, 166°58.50' E, 10 m, 15.07.1985 : 1 ♂, 1 ♀. — Stn 588, 22°31.60' S, 167°26.20' E, 31 m, 18.07.1985 : 1 ♂, 2 ♀.

New Caledonia. Material identified as *Tetralia glaberrima* by A. MILNE EDWARDS : 3 ♂, 3 ♀ (MNHN-B 2907).

TYPE MATERIAL. — 1 ♂ cw. 6.6 mm (MNHN-B 21355) collected at station 436 is the holotype. 1 ♀ (MNHN-B 21356) from the same station is a paratype. 1 ♂, 1 ♀ (BMNH 1988 : 24), 1 ♂, 1 ♀ (MNHN-B 21357) and 1 ♂, 1 ♀ (TAU 26820) collected at station 463 are all paratypes.

DESCRIPTION OF HOLOTYPE. — Carapace (fig. 4 a) shiny, slightly dorsally convex and microscopically granular behind front. Frontal margin (fig. 4 b) wide, arched, evenly and minutely dentate. Median lobes feebly defined. Front separated by shallow emargination from crenate, denticulate superior orbital angle. Postorbital angle prominent. Anterolateral margins weakly concave. Epibranchial spine absent. Posterior lateral margins converge posteriorly.

Inferior orbital angle triangular and granular. Lower margin of antennular fossa microscopically granulate. Basal article of antennae extending between superior and inferior orbital angles, reaching orbital margin. Inner distal angle of basal article obliquely truncate.

Anterior margin of buccal frame sinuous, medially notched with ridges at termination of efferent canals. Third maxillipeds (fig. 4 c) with exopod columnar, tapered distally, with triangular tooth distally at its inner margin. Ischium of endopod subrectangular, its lateral margins parallel, distal margin concave. A shallow sulcus parallel to inner margin. Inner distal angle of merus excavate, outer distal angle rounded. Inner lateral margins of both ischium and merus fringed with setae. Distal half of endopod of first maxilliped (fig. 4 d) nearly rectangular, anterior margin bearing a few short setae.

Chelipeds (fig. 4 e-h) markedly unequal. Frontal margin of ischium with prominent arcuate tooth. Merus short with its anterior margin carinate and dentate. Denticles successively larger laterally and no foliaceous expansion. Carpus globose with an obtuse tubercle on anterior internal margin. Manus of large chela (fig. 4 e & f) bulky, laterally compressed with a setae-filled cavity at its upper proximal surface and lower margin densely granulate. Finger short and curved. Manus of smaller chela (fig. 4 g-h) narrow, lower margin granular; cutting edges of fingers furnished with few teeth, meeting throughout. Merus of pereopods (fig. 5 a) laterally flattened, dorsal margins cristate. Posterior margin of fifth pereopod propodus fringed with long setae. Dactylus (fig. 5 b) short, with cornute tip.

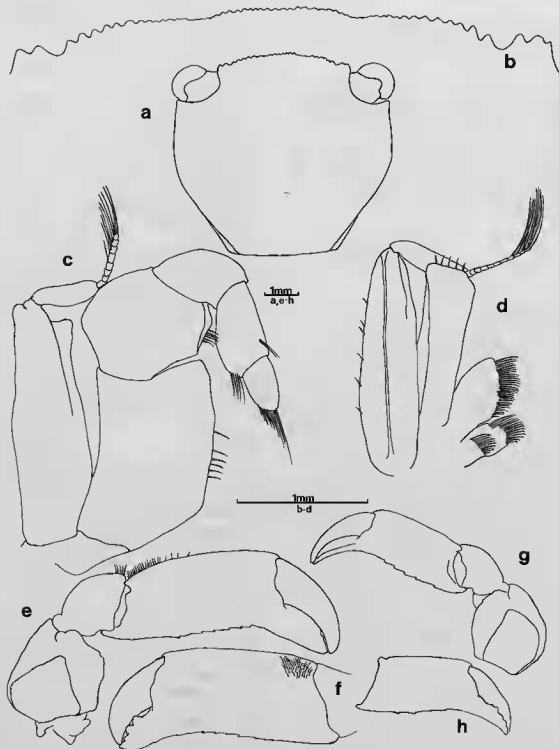


FIG. 4. — *Tetralia sanguineomaculata* sp. nov., ♂ paratype, BMNH 1988 : 24; dorsal aspect of, a. carapace, b. frontal margin; ventral aspect of, c. third maxilliped, d. first maxilliped; large cheliped, e. dorsal aspect, f. anterior aspect; small cheliped, g. dorsal aspect; h. anterior aspect.

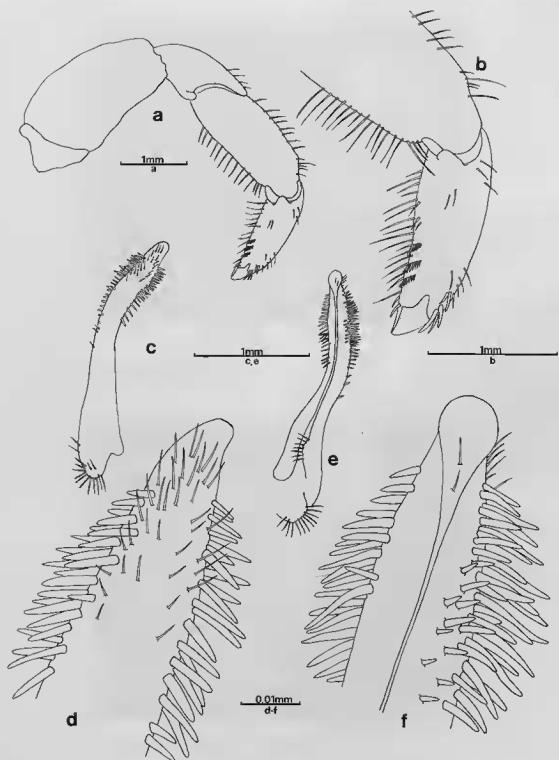


FIG. 5. — *Tetralia sanguineomaculata* sp. nov., ♂ paratype, BMNH 1988 : 24; posterior aspect of, a. fifth pereiopod, b. dactylus of fifth pereiopod; c-d. dorsal aspect of first left pleopod; e-f. ventral aspect of first left pleopod.

Posterior distal surface of dactylus furnished with chitinous setae arranged in three discontinuous transverse rows. Superior distal surface setose, with three curved spines behind tip of dactylus.

First male pleopod (fig. 5 c-f) short, slightly tapered, distally fringed with short setae.

In juveniles a pointed epibranchial spine is present at the junction of the anterior and posterior lateral margins. Further, some males examined had cheliped fingers with an elongated oval gape, meeting only at the tips.

COLOUR IN ALCOHOL. — Carapace and legs yellowish except for light grey band along margin and a thin, thread-like orange-red line edging the carapace and chelipeds and distinctive reddish spots on pereopods.

ETYMOLOGY. — From the latin, “*sanguis*” meaning blood and “*macula*” meaning spot after the distinctive red spots on the pereopods.

REMARKS. — The description of *Tetralia glaberrima* by A. MILNE EDWARDS is rather general and insufficient for reliable identification. However, the specimens MNHN-B 4346 & 2907, although brittle and colourless, resemble *T. sanguineomaculata*. The new species is similar to *T. fulva*, but differs in the presence of the red spots on the pereopods.

Trapezia cymodoce (Herbst, 1801)

Cancer cymodoce Herbst, 1801 : 22, pl. 51, fig. 5.

Trapezia dentifrons Latreille, 1828 : 695. — H. MILNE EDWARDS, 1834 : 428. — LUCAS, 1840 : 74.

Trapezia cymodoce - AUDOUIN, 1826 : 285, pl. 5, fig. 2. — DE HAAN, 1833 : 22. — GERSTAECKER, 1857 : 125. — HELLER, 1861a : 13 ; 1865 : 25 (part). — COULON, 1864 : 569. — HILGENDORF, 1869 : 76 (part), pl. 2, fig. 4 ; 1879 : 24. — MIERS, 1878 : 409 ; 1880 : 238 ; 1884 : 535 ; 1886 : 166. — DE MAN, 1880 : 177 ; 1881 : 94 ; 1887a : 69 ; 1887b : 316 ; 1895 : 555 ; 1902 : 640 (part). — HASWELL, 1882 : 76. — WALKER, 1887 : 110. — CANO, 1888 : 172. — POCOCK, 1890 : 73. — THALLWITZ, 1892 : 53. — HENDERSON, 1893 : 366. — ZEHTNER, 1894 : 156. — DEL PRATO, 1896 : 183. — ORTMANN,

1897 : 203. — WHITELEGGE, 1897 : 137 (part). — ALCOCK, 1898 : 219. — CALMAN, 1900 : 20 ; 1909b : 705. — BORRADAILE, 1900 : 591 ; 1902 : 265. — NOBILI, 1901 : 15 ; 1905 : 10 ; 1906a : 292 ; 1906b : 143. — DOFLEIN, 1904 : 104. — LENZ, 1905 : 351 ; 1910 : 552 ; 1912 : 4. — LAURIE, 1906 : 410 ; 1915 : 460 (part), fig. 2. — GRANT & McCULLOCH, 1906 : 118. — RATHBUN, 1910 : 359 ; 1911 : 234 ; 1923 : 129. — STEBBING, 1910 : 304. — BOUVIER, 1915 : 272. — GRAVIER 1920 : 469. — BALSS, 1922 : 134 ; 1924 : 13 ; 1935a : 139 ; 1935b : 41 ; 1938 : 72. — EDMONSON, 1923 : 20 ; 1946 : 310 ; 1963 : 297. — URITA, 1926 : 17. — GRAVELY, 1927 : 144. — PESTA, 1928 : 72. — WARD, 1932 : 254. — SAKAI, 1934 : 311 ; 1936 : 169 ; 1939 : 551, fig. 63. — BOONE, 1954 : 168, pl. 87. — GORDON, 1934 : 59. — MIYAKE, 1936 : 509. — CHOPRA & DAS, 1937 : 410. — ESTAMPADOR, 1937 : 530. — GURNEY, 1938 : 76, pl. 2, figs 23-28. — MONNOD, 1938 : 141. — VATOVA, 1943 : 21. — STEPHENSEN, 1945 : 161, fig. 42 c, d. — TWEEDIE, 1947 : 27. — BARNARD, 1950 : 275, fig. 52. — FOURMANOIR, 1954 : 13. — GUINOT, 1962a : 240 ; 1962b : 2. — GARTH, 1964 : 140 ; 1971 : 188 ; 1974 : 198. — MICHEL, 1964 : 30. — PATTON, 1966 : 285 ; 1974 : 223, fig. 1 & 2. — SERÈNE, 1971 : 146, figs 26, 28, 30, 32. — ODINETZ, 1984 : 432 (part), figs 1, 2.

Trapezia coerulea Rüppell, 1830 : 27 (part), pl. 5, fig. 7. — HELLER, 1861b : 348 ; 1865 : 25 (part). — KOSSMAN, 1877 : 43 (part). — RICHTERS, 1880 : 152. — ODINETZ, 1984 : 438, figs 3 a, 4 a.

Grapsillus dentatus Macleay, 1838 : 67. — KRAUSS, 1843 : 35 (part).

Trapezia dentata — DANA, 1852 : 258 ; 1855 : 6, pl. 15, fig. 6. — A. MILNE EDWARDS, 1873 : 261. — KLUNZINGER, 1913 : 214, pl. 4, fig. 10.

Trapezia hirtipes Jacquinet, 1842-1853, pl. 4, fig. 14. — JACQUINET & LUCAS, 1853 : 44. — WARD, 1939 : 13.

Trapezia ferruginea var. *coerulea* - PAULSON, 1875 : 53, pl. 7, figs 4, 4 a.

Trapezia cymodoce var. *typica* - ORTMANN, 1893 : 482. — WEDENISSOW, 1894 : 412.

Trapezia cymodoce var. *dentata* - ORTMANN, 1893 : 483 (part).

Grapsillus cymodoce - NOBILI, 1899 : 260. — RATHBUN, 1906 : 865, pl. 11, fig. 6.

Trapezia cymodoce dentata - RATHBUN, 1907 : 58 (part).

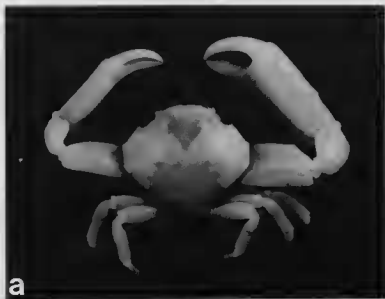


FIG. 6. — a, *Calocarcinus crosnieri* sp. nov., holotype, cw. 10.5 mm (MNHN-B 21354). — *Tetralia sanguineomaculata* sp. nov., holotype, cw. 6.6 mm (MNHN-B 21355).

Trapezia cymodoce ferruginea - RATHBUN, 1907 : 58 (part).

non *Trapezia cymodoce* - GUÉRIN-MÉNEVILLE, 1831 : 11, pl. 1, fig. 4a-n. — RÜPPELL, 1830 : 27. — RANDALL, 1840 : 117. — DANA, 1852 : 257 ; 1855 : 6, pl. 15, fig. 5a-i. — HELLER, 1861b : 352. — SMITH, 1869 : 287. — A. MILNE EDWARDS, 1873 : 260 ; 1881 : 342. — LOCKINGTON, 1877 : 105. — CANO, 1889 : 211. — FAXON, 1895 : 22. — SENDLER, 1923 : 39 ; all = *Trapezia ferruginea* Latreille, 1825.

MATERIAL EXAMINED. — New Caledonia. Lagoon survey : 6-45 m, May 1984 - July 1985 : 93 ♂, 96 ♀ (MNHN).

New Caledonia. Material identified by A. MILNE EDWARDS as *Trapezia dentata* : 5 ♂, 2 ♀ (MNHN-B 2919) ; 3 ♂, 3 ♀ (MNHN-B 2990).

Egypt, Gulf of Suez, Et Tur (Tor) : January-July 1826, det. RÜPPELL (1830) as *Trapezia coerulea* : 11 ♂, 16 ♀ (SMF 4101).

REMARKS. — *Cancer cymodoce* was established by HERBST (1801 : 22), but his description was too superficial for taxonomic use and the accompanying illustration stylistic. This is, perhaps, the cause of the many subsequent misidentifications. In the years between the original description and the photograph published by RATHBUN (1906 : 865), defining the extant type of HERBST, numerous descriptions of *T. cymodoce* were added to the literature under different names. *Trapezia dentifrons* was depicted by LATREILLE (1828 : 695) as a variety of *T. cymodoce*, but our re-examination of the male type specimen showed this to belong to *T. cymodoce*. Henri MILNE EDWARDS (1834 : 428) and LUCAS (1840 : 74) erroneously followed LATREILLE. The material described by RÜPPELL from the Red Sea as *Trapezia coerulea* consists of 11 ♂ and 16 ♀ (SMF 4101), all have syntype status. This species was subsequently synonymised by DE MAN (1880 : 177) with *T. cymodoce*. GALIL (1988 : 161) borrowed the syntypes of RÜPPELL from the Senkenberg Museum and redetermined two of the specimens, 1 ♂, 1 ♀, as *T. ferruginea* (now SMF 11759), the remainder were confirmed as *T. cymodoce*. From this examination a male specimen of *T. cymodoce*, (cw. 15.8 mm, cl. 14.1 mm) was selected as a lectotype of *T. coerulea*, so as to make *T. coerulea* a junior synonym of *T. cymodoce*. The lectotype retained the original

registration number, SMF 4101 and a new registration number (SMF 177116) was issued to the rest of the 9 ♂ and 15 ♀ specimens. These specimens and those determined as *T. ferruginea* (SMF 11759) are consequently paralectotypes of *T. coerulea*. HELLER (1861b : 348 and 1865 : 25), KOSSMANN (1877 : 43), RICHTERS (1880 : 152) and ODINETZ (1984 : 438) compared their material with that of RÜPPELL and similarly identified *T. cymodoce* from the Red Sea as *T. coerulea*. PAULSON (1875) compounded the problem by labelling *T. cymodoce* from the Red Sea as *T. ferruginea* var. *coerulea*. A new species, *Grapsillus dentatus* was described by MACLEAY (1838 : 67) from South African material. Reviewing this collection, KRAUSS (1843 : 35) synonymised *T. ferruginea* (Latreille) and *T. cymodoce* sensu AUDOUIN (1826) under the name *G. dentatus* MacLeay. DANA (1852 : 258) did not accept the validity of *Grapsillus* and reassigned the species of MACLEAY to *Trapezia*. If the description and illustration (1855, pl. 15, fig. 6 a-d) by DANA of *T. dentata* are closely studied, it appears that this species is also identical to *T. cymodoce* (Herbst). Alphonse MILNE EDWARDS (1873 : 261), citing DANA and MACLEAY, records *T. dentata* from New Caledonia, but emphasises that his material is characterised by a pubescence on the external face of the cheliped. Apparently, A. MILNE EDWARDS presented two of these specimens to the Leiden Museum where they were examined by DE MAN (1880 : 177), who concluded that the *T. dentata* of A. MILNE EDWARDS was identical to *T. cymodoce* (Herbst). The present study confirms that the remaining New Caledonian material of A. MILNE EDWARDS held in the Paris Museum, is *T. cymodoce*. RATHBUN (1907 : 58) identified material from the South Pacific as *T. cymodoce dentata* (MacLeay). However, after checking with the specimens at the Museum of Comparative Zoology, Harvard, part of RATHBUN's material collected from Funafuti Reef on 24th December 1899, was redetermined as *T. cymodoce*. Although the type of *G. dentata* is no longer extant, GARTH (pers. comm.) has seen it and has confirmed that the material is referable to *T. cymodoce*. *Trapezia hirtipes*, from the Marquesas, was figured by JACQUINOT (1843-1853) and characterised by JACQUINOT & LUCAS (1853 : 44) as possessing a tomentum covering the surface of the chelae. The type material of *T. hirtipes* is still extant in the Paris Museum and

after examination, is here synonymised with *T. cymodoce*. ORTMANN (1893 : 481) divided *T. cymodoce* into three varieties because, in his opinion, all trapeziid species are of a uniform colour being differentiated only by unstable morphological characters. Of ORTMANN's material, only his specimens from Upolu, Samoa, were obtained for examination and although these were designated by him as *T. cymodoce* var. *dentata* Dana, they proved to be *T. cymodoce* (Herbst). *Trapezia cymodoce* (Herbst) and *T. ferruginea* (Latreille) have similar distributions, ranging from the Red Sea through to the Pacific Ocean, but only the latter species is found on the western coast of Central America. The poor original descriptions and overlapping ranges have contributed to the confusion between these two species. GUÉRIN-MÉNEVILLE (1831) illustrated what he considered *T. cymodoce* (pl. 1, fig. 4 a-n), however the shallow lobes of the frontal margin, the form of the carapace and the absence of a frontal spine at the angle of the cheliped carpus in his illustration are characters diagnostic of *T. ferruginea*. After 1830 a number of authors cited material of *T. ferruginea* under the incorrect name *T. cymodoce* Guérin-Méneville, viz. DANA (1852 : 257; 1855, pl. 15, fig. 5 a-i; Tahiti and Hawaii), HELLER (1861b : 352; 1865 : 25; Red Sea), SMITH (1869 : 287; west coast of tropical America), A. MILNE EDWARDS (1873 : 260; 1881 : 342; New Caledonia and Mexico respectively) and LOCKINGTON (1877 : 105; Panama). *Trapezia miniata* Jacquinot & Lucas, (1853 : 43) was synonymised by DANA (1852 : 258) and A. MILNE EDWARDS (1873 : 260; 1881 : 342), with *T. cymodoce*, and by ORTMANN (1893 : 483) with *T. cymodoce* var. *dentata*. In all probability *T. miniata* is a junior synonym of *T. ferruginea*. Only HILGENDORF (1869 : 76) and DE MAN (1880 : 177) correctly distinguished between *T. cymodoce* and *T. ferruginea*. Both list diagnostic characters that helped identify these two species, but the observations of these authors appear to have been overlooked. CANO (1888 : 172) identified specimens as *T. cymodoce*, he compared them with the account of that species by MIERS (1878 : 409), and recorded the characters that identified the material from Tahiti as the true *T. cymodoce*. In his 1889 paper, CANO remarked that specimens from Honolulu differed from the *T. cymodoce* of MIERS. It is probable that this material was *T. ferruginea* as to date there have been no

confirmed records of *T. cymodoce* from the Hawaiian Islands.

Trapezia guttata Rüppell, 1830

- Trapezia guttata* Rüppell, 1830 : 27. — WHITE, 1847 : 23. — HELLER, 1861a : 14; 1861b : 351; 1865 : 25. — RICHTERS, 1880 : 52. — DE MAN, 1880 : 176; 1881 : 94; 1890 : 64; 1902 : 640, pl. 21, fig. 25. — POCOCK, 1890 : 73. — ORTMANN, 1893 : 484. — LENZ, 1905 : 351. — NOBILY, 1906a : 293. — MIYAKE, 1936 : 509. — GURNEY, 1938 : 74, pl. 2, figs 19-22. — FOREST & GUINOT, 1961 : 136, figs 138 a - b. — GUINOT, 1962a : 240. — MICHEL, 1964 : 30. — SERÈNE, 1968 : 88; 1971 : 147; 1984 : 271, fig. 178, pl. 38a. — KENSLEY, 1970 : 104. — GARTH, 1971 : 188. — SERÈNE et al., 1974 : 24; 1976 : 19. — SAKAI, 1976 : 508, fig. 270, pl. 183, fig. 3. — TAKEDA & NUNOMURA, 1976 : 77. — CHEN & LAN, 1978 : 280, fig. 11, pl. 2, fig. 8. — EDWARDS & EMBERTON, 1980 : 232. — ODI-NETZ, 1984 : 442.
- Trapezia ferruginea* - DANA, 1852 : 260 (part); 1855 : 6, pl. 16, fig. 1 b.
- Trapezia ferruginea* var. *guttata* - PAULSON, 1875 : 54. — ALCOCK, 1898 : 220. — BORRADAILE, 1900 : 590; 1902 : 265. — BALSS, 1922 : 134. — RAMADAN, 1936 : 35.
- Trapezia guttata* var. - MIERS, 1886 : 166, pl. 12, fig. 1.
- Trapezia ferruginea guttata* - ORTMANN, 1897 : 205. — DOFLEIN, 1904 : 104.
- Trapezia cymodoce ferruginea* - RATHBUN, 1907 : 58 (part); 1911 : 234 (part).
- Trapezia bidentata* - KLUNZINGER 1913 : 307 (part).
- Trapezia cymodoce guttata* - GORDON, 1934 : 59. — SAKAI, 1936 : 170; 1939 : 552.
- Trapezia davaoensis* Ward, 1941 : 14, fig. 27. — SERÈNE, 1971 : 146. — SERÈNE et al., 1976 : 19. — KROPP & BIRKELAND, 1981 : 629.
- Trapezia miersi* Ward, 1941 : 15.
- Trapezia ferruginea* forma *guttata* - PATTON, 1966 : 285; 1974 : 223.
- non *Trapezia guttata* - BARNARD, 1950 : 277 = *Trapezia tigrina* Eydoux & Souleyet, 1842.

MATERIAL EXAMINED. — New Caledonia. Lagoon survey : 2-50 m, May 1984 - July 1985 : 52 ♂, 70 ♀ (MNHN).

REMARKS. — *Trapezia guttata* was originally described by RÜPPELL from Red Sea material. Its morphological features and characteristic colour pattern make it easily identifiable; i.e. the cheliped merus is longer than broad, carapace is cream coloured with a dark band anteriorly, ambulatory merus with red spots and propodus and dactylus with red longitudinal lines. However, some authors considered it a subspecies, variety or form of *Trapezia ferruginea*, while others considered it a variety of *T. cymodoce* (see GALIL, 1988 : 166). MIERS (1886 : 166) misinterpreting the original description of RÜPPELL, regarded his material from Fiji as a variety, *T. guttata* var., because the dark spots on his specimen were restricted to the walking legs only and were not present on the chelipeds. Translating the original German description, RÜPPELL described *T. guttata* as possessing a yellowish-brown carapace and feet, the latter with many small, dark brown dots. Subsequently, WARD (1941 : 15) gave species status to *T. guttata* var. of MIERS and named it *T. miersi*. But our examination of MIERS' specimen has shown it to be the true *T. guttata* Rüppell. RATHBUN (1907 : 58) identified 1 ♂, 1 ♀, from Mohican reef, Rangiroa Id., Tuamotu Archipelago as *T. cymodoce ferruginea*, and she remarked that the variety had a dark band across the front, reticulated palms and spotted legs. RATHBUN concluded that this was the *guttata* form of ALCOCK. Another ♂ and ♀ dredged from Salomon Is., Chagos Archipelago, were identified by RATHBUN (1911 : 234) as varying towards *T. guttata* Rüppell. Further, KLUNZINGER (1913 : 308) described part of his *T. bidentata* (var. *guttata*) specimens as having "rotbraunen Punkten oder Flecken an den Schreitfüssen". The specimens of RATHBUN and KLUNZINGER are assigned to *guttata*. WARD (1941 : 14) established

a new species, *T. davaoensis* for his Philippine specimens and his paratypes are extant in the American Museum of Natural History. This species of WARD was examined by GALIL and is here referred to *T. guttata*. The description of material ascribed to *T. guttata* by BARNARD (1950 : 277) fits *T. tigrina* Eydoux & Souleyet, and should be assigned to this species.

Although *T. guttata* has a wide distribution, ranging from the the Red Sea to the Central Pacific, and is evidently quite common in New Caledonia, this is the first time this species has been recorded from these islands.

Trapezia septata Dana, 1852

Trapezia septata Dana, 1852 : 260.

Trapezia areolata var. *inermis* A. Milne Edwards, 1873 : 259, pl. 10, fig. 6.

Trapezia septata - GALIL & LEWINSOHN, 1985b : 288 (full synonymic list), figs 2, 5 & 6.

MATERIAL EXAMINED. — New Caledonia. Lagoon survey : stn 4, 22°22.50' S, 166°20.70' E, 9 m, 21.05.1984 : 1 ♂. — Stn 69, 22°22.80' S, 166°31.70' E, 13 m, 20.08.1984 : 1 ♀. — Stn 160, 22°36.20' S, 166°37.10' E, 10 m, 24.08.1984 : 1 ♂, 2 ♀. — Stn 412, 22°39.50' S, 167°18.60' E, 40 m, 24.01.1985 : 1 ♂. — Stn 480, 18°56.00' S, 163°29.20' E, 31 m, 21.03.1985 : 1 ♀ (all MNHN).

New Caledonia. Material identified by A. MILNE EDWARDS as *Trapezia areolata* var. *inermis*, 3 ♂, 4 ♀ (MNHN-B 2915); 1 ♂, 2 ♀ (MNHN-B 2914).

REMARKS. — From the material collected in New Caledonia, A. MILNE EDWARDS identified *Trapezia areolata* (MNHN-B 2914) and *T. areolata* var. *inermis* (MNHN-B 2915), both redetermined here as *T. septata* Dana.

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